

Applicant : Vincent P. Stan  
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A2-2002

668	668C>T	A223V
1059	1059T>C	Silent
1289	1289C>A	3'
1308	1308T>C	3'
1784	1784G>A	3'
AF061655	AF061655	123920
deaminase, promoter (SEQ ID NO:16)		GEN-LUJ
575	575T>C	Cytidine
648	648T>C	Intron
771	771G>C	Intron
883	883G>A	Intron
941	941^insC	5'
1051	1051A>C	K27Q

In the claims

Cancel claim 1-16.  
Add new claims 17 - 49

--17. An isolated nucleic acid probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:6, the probe comprising at least one of:

- (a) nucleotide 1066 wherein N is C;
- (b) nucleotide 1136 wherein N is G;
- (c) nucleotide 1497 wherein N is A;

or the complement thereof.

18. The isolated nucleic acid probe of claim 17 comprising at least two of:

- (a) nucleotide 1066 wherein N is C;
- (b) nucleotide 1136 wherein N is G;
- (c) nucleotide 1497 wherein N is A;

or the complement thereof.

19. The probe of claim 17 comprising no more than 500 contiguous nucleotides of SEQ ID NO:6.

20. The probe of claim 17 comprising no more than 200 contiguous nucleotides of SEQ ID NO:6.

21. The probe of claim 17 comprising no more than 100 contiguous nucleotides of SEQ ID NO:6.

22. The probe of claim 17 comprising no more than 50 contiguous nucleotides of SEQ ID NO:6.

23. The probe of claim 17 comprising DNA.
24. The probe of claim 17 comprising a peptide nucleic acid.
25. The probe of claim 17 further comprising a detectable label.
26. The probe of claim 25 wherein the detectable label is a fluorescent label.
27. A method comprising:
- (a) providing a sample comprising nucleic acid molecules present in a biological sample obtained from a patient;
  - (b) contacting the sample with a probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:6, the probe comprising at least one of:
    - (i) nucleotide 1066 wherein N is C;
    - (ii) nucleotide 1136 wherein N is G;
    - (iii) nucleotide 1497 wherein N is A;
- or the complement thereof; and
- (c) determining if the sample comprises a nucleic acid molecule that hybridizes to the probe.
28. An isolated nucleic acid probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:7, the probe comprising at least one of:
- (a) nucleotide 276 wherein N is T;
  - (b) nucleotide 321 wherein N is C;
  - (c) nucleotide 452 wherein N is A;
  - (d) C is inserted after nucleotide 457;
  - (e) nucleotide 491 wherein N is A;
  - (f) nucleotide 533 wherein N is C;
  - (g) nucleotide 624 wherein N is C;
  - (h) nucleotide 639 wherein N is G;
  - (i) nucleotide 655 wherein N is C;
- or the complement thereof.
29. The isolated nucleic acid probe of claim 28 comprising at least two of:
- (a) nucleotide 276 wherein N is T;
  - (b) nucleotide 321 wherein N is C;
  - (c) nucleotide 452 wherein N is A;
  - (d) C is inserted after nucleotide 457;
  - (e) nucleotide 491 wherein N is A;
  - (f) nucleotide 533 wherein N is C;
  - (g) nucleotide 624 wherein N is C;
  - (h) nucleotide 639 wherein N is G;
  - (i) nucleotide 655 wherein N is C;

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or the complement thereof.

30. The probe of claim 28 comprising no more than 500 contiguous nucleotides of SEQ ID NO:7.

31. The probe of claim 28 comprising no more than 200 contiguous nucleotides of SEQ ID NO:7.

32. The probe of claim 28 comprising no more than 100 contiguous nucleotides of SEQ ID NO:7.

33. The probe of claim 28 comprising no more than 50 contiguous nucleotides of SEQ ID NO:7.

34. The probe of claim 28 comprising DNA.

35. The probe of claim 28 comprising a peptide nucleic acid.

36. The probe of claim 28 further comprising a detectable label.

37. The probe of claim 36 wherein the detectable label is a fluorescent label.

38. A method comprising:

(a) providing a sample comprising nucleic acid molecules present in a biological sample obtained from a patient;  
(b) contacting the sample with a probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:7, the probe comprising at least one of:

- (i) nucleotide 276 wherein N is T;
- (ii) nucleotide 321 wherein N is C;
- (iii) nucleotide 452 wherein N is A;
- (iv) C is inserted after nucleotide 457;
- (v) nucleotide 491 wherein N is A;
- (vi) nucleotide 533 wherein N is C;
- (vii) nucleotide 624 wherein N is C;
- (viii) nucleotide 639 wherein N is G;
- (ix) nucleotide 655 wherein N is C;

or the complement thereof; and

(c) determining if the sample comprises a nucleic acid molecule that hybridizes to the probe.

39. An isolated nucleic acid probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:8, the probe comprising at least one of:

- (a) nucleotide 701 wherein N is C;
- (b) nucleotide 716 wherein N is G;

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- (c) nucleotide 732 wherein N is C;  
(d) nucleotide 1293 wherein N is G;  
(e) nucleotide 1322 wherein N is G;  
(f) nucleotide 1379 wherein N is C;  
(g) nucleotide 1590 wherein N is T;  
(h) nucleotide 1688 wherein N is G;  
(i) nucleotide 2401 wherein N is G;  
(j) nucleotide 2429 wherein N is A;  
(k) nucleotide 2488 wherein N is T;  
(l) nucleotide 2594 wherein N is T;  
(m) nucleotide 2618 wherein N is A;  
(n) nucleotide 3083 wherein N is A;  
(o) nucleotide 3125 wherein N is A;  
(p) nucleotide 3212 wherein N is T;  
(q) nucleotide 3619 wherein N is A;  
(r) nucleotide 3635 wherein N is A;  
(s) nucleotide 4256 wherein N is A;  
(t) nucleotide 4898 wherein N is G;  
(u) nucleotide 5006 wherein N is T;  
(v) nucleotide 5062 wherein N is A;  
(w) nucleotide 5167 wherein N is A;  
(x) nucleotide 11069 wherein N is G;  
(y) nucleotide 11238 wherein N is T;  
(z) nucleotide 11293 wherein N is G;  
(aa) nucleotide 11422 wherein N is C;  
(bb) nucleotide 11686 wherein N is T;  
(cc) nucleotide 12598 wherein N is C;  
(dd) nucleotide 13171 wherein N is C;  
(ee) nucleotide 13298 wherein N is A;  
(ff) nucleotide 13645 wherein N is C;  
(gg) nucleotide 13751 wherein N is A;  
(hh) nucleotide 13782 wherein N is C;  
(ii) nucleotide 13806 wherein N is C;  
(jj) nucleotide 13813 wherein N is C;  
(kk) nucleotide 14479 wherein N is G;  
(ll) T is inserted after nucleotide 14546;  
(mm) nucleotide 14585 wherein N is T;  
(nn) nucleotide 14729 wherein N is A;  
(oo) nucleotide 14787 wherein N is T;  
(pp) nucleotide 14795 wherein N is A;  
(qq) nucleotide 15041 wherein N is C;  
(rr) nucleotide 15343 wherein N is A;  
(ss) nucleotide 15449 wherein N is A;  
(tt) nucleotide 15502 wherein N is A;

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- 43 *cont*
- (uu) nucleotide 15545 wherein N is T;
  - (vv) nucleotide 15589 wherein N is G;
  - (ww) nucleotide 15769 wherein N is T;
  - (xx) nucleotide 15839 wherein N is G;
  - (yy) nucleotide 16148 wherein N is A;
  - (zz) nucleotide 16198 wherein N is G; and
  - (aaa) nucleotide 16202 wherein N is T;

or the complement thereof.

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40. The isolated nucleic acid probe of claim 39 comprising at least two of:
- (a) nucleotide 701 wherein N is C;
  - (b) nucleotide 716 wherein N is G;
  - (c) nucleotide 732 wherein N is C;
  - (d) nucleotide 1293 wherein N is G;
  - (e) nucleotide 1322 wherein N is G;
  - (f) nucleotide 1379 wherein N is C;
  - (g) nucleotide 1590 wherein N is T;
  - (h) nucleotide 1688 wherein N is G;
  - (i) nucleotide 2401 wherein N is G;
  - (j) nucleotide 2429 wherein N is A;
  - (k) nucleotide 2488 wherein N is T;
  - (l) nucleotide 2594 wherein N is T;
  - (m) nucleotide 2618 wherein N is A;
  - (n) nucleotide 3083 wherein N is A;
  - (o) nucleotide 3125 wherein N is A;
  - (p) nucleotide 3212 wherein N is T;
  - (q) nucleotide 3619 wherein N is A;
  - (r) nucleotide 3635 wherein N is A;
  - (s) nucleotide 4256 wherein N is A;
  - (t) nucleotide 4898 wherein N is G;
  - (u) nucleotide 5006 wherein N is T;
  - (v) nucleotide 5062 wherein N is A;
  - (w) nucleotide 5167 wherein N is A;
  - (x) nucleotide 11069 wherein N is G;
  - (y) nucleotide 11238 wherein N is T;
  - (z) nucleotide 11293 wherein N is G;
  - (aa) nucleotide 11422 wherein N is C;
  - (bb) nucleotide 11686 wherein N is T;
  - (cc) nucleotide 12598 wherein N is C;
  - (dd) nucleotide 13171 wherein N is C;
  - (ee) nucleotide 13298 wherein N is A;
  - (ff) nucleotide 13645 wherein N is C;
  - (gg) nucleotide 13751 wherein N is A;
  - (hh) nucleotide 13782 wherein N is C;

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- (ii) nucleotide 13806 wherein N is C;  
(jj) nucleotide 13813 wherein N is C;  
(kk) nucleotide 14479 wherein N is G;  
(ll) T is inserted after nucleotide 14546;  
(mm) nucleotide 14585 wherein N is T;  
(nn) nucleotide 14729 wherein N is A;  
(oo) nucleotide 14787 wherein N is T;  
(pp) nucleotide 14795 wherein N is A;  
(qq) nucleotide 15041 wherein N is C;  
(rr) nucleotide 15343 wherein N is A;  
(ss) nucleotide 15449 wherein N is A;  
(tt) nucleotide 15502 wherein N is A;  
(uu) nucleotide 15545 wherein N is T;  
(vv) nucleotide 15589 wherein N is G;  
(ww) nucleotide 15769 wherein N is T;  
(xx) nucleotide 15839 wherein N is G;  
(yy) nucleotide 16148 wherein N is A;  
(zz) nucleotide 16198 wherein N is G; and  
(aaa) nucleotide 16202 wherein N is T;

or the complement thereof.

41. The probe of claim 39 comprising no more than 500 contiguous nucleotides of SEQ ID NO:8.

42. The probe of claim 39 comprising no more than 200 contiguous nucleotides of SEQ ID NO:8.

43. The probe of claim 39 comprising no more than 100 contiguous nucleotides of SEQ ID NO:8.

44. The probe of claim 39 comprising no more than 50 contiguous nucleotides of SEQ ID NO:8.

45. The probe of claim 39 comprising DNA.

46. The probe of claim 39 comprising a peptide nucleic acid.

47. The probe of claim 39 further comprising a detectable label.

48. The probe of claim 47 wherein the detectable label is a fluorescent label.

49. A method comprising:

(a) providing a sample comprising nucleic acid molecules present in a biological sample obtained from a patient;

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(b) contacting the sample with a probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:8, the probe comprising at least one of:

- (i) nucleotide 701 wherein N is C;
- (ii) nucleotide 716 wherein N is G;
- (iii) nucleotide 732 wherein N is C;
- (iv) nucleotide 1293 wherein N is G;
- (v) nucleotide 1322 wherein N is G;
- (vi) nucleotide 1379 wherein N is C;
- (vii) nucleotide 1590 wherein N is T;
- (viii) nucleotide 1688 wherein N is G;
- (ix) nucleotide 2401 wherein N is G;
- (x) nucleotide 2429 wherein N is A;
- (xi) nucleotide 2488 wherein N is T;
- (xii) nucleotide 2594 wherein N is T;
- (xiii) nucleotide 2618 wherein N is A;
- (xiv) nucleotide 3083 wherein N is A;
- (xv) nucleotide 3125 wherein N is A;
- (xvi) nucleotide 3212 wherein N is T;
- (xvii) nucleotide 3619 wherein N is A;
- (xviii) nucleotide 3635 wherein N is A;
- (xix) nucleotide 4256 wherein N is A;
- (xx) nucleotide 4898 wherein N is G;
- (xxi) nucleotide 5006 wherein N is T;
- (xxii) nucleotide 5062 wherein N is A;
- (xxiii) nucleotide 5167 wherein N is A;
- (xxiv) nucleotide 11069 wherein N is G;
- (xxv) nucleotide 11238 wherein N is T;
- (xxvi) nucleotide 11293 wherein N is G;
- (xxvii) nucleotide 11422 wherein N is C;
- (xxviii) nucleotide 11686 wherein N is T;
- (xxix) nucleotide 12598 wherein N is C;
- (xxx) nucleotide 13171 wherein N is C;
- (xxxi) nucleotide 13298 wherein N is A;
- (xxxii) nucleotide 13645 wherein N is C;
- (xxxiii) nucleotide 13751 wherein N is A;
- (xxxiv) nucleotide 13782 wherein N is C;
- (xxxv) nucleotide 13806 wherein N is C;
- (xxxvi) nucleotide 13813 wherein N is C;
- (xxxvii) nucleotide 14479 wherein N is G;
- (xxxviii) T is inserted after nucleotide 14546;
- (xxxix) nucleotide 14585 wherein N is T;
- (xl) nucleotide 14729 wherein N is A;
- (xli) nucleotide 14787 wherein N is T;
- (xlii) nucleotide 14795 wherein N is A;

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- (xliii) nucleotide 15041 wherein N is C;
  - (xliv) nucleotide 15343 wherein N is A;
  - (xlv) nucleotide 15449 wherein N is A;
  - (xlvi) nucleotide 15502 wherein N is A;
  - (xlvii) nucleotide 15545 wherein N is T;
  - (xlviii) nucleotide 15589 wherein N is G;
  - (xlix) nucleotide 15769 wherein N is T;
  - (l) nucleotide 15839 wherein N is G;
  - (li) nucleotide 16148 wherein N is A;
  - (lii) nucleotide 16198 wherein N is G; and
  - (liii) nucleotide 16202 wherein N is T

or the complement thereof; and

(c) determining if the sample comprises a nucleic acid molecule that hybridizes to the probe.--

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